

ISL29125 Evaluation Board Calibration Procedure

1. Connect ISL29125 evaluation board to the PC/Laptop via microUSB cable
2. Launch "Chroma meter"

 - a. Open EEprom GUI by clicking on "CCM" on the left top corner

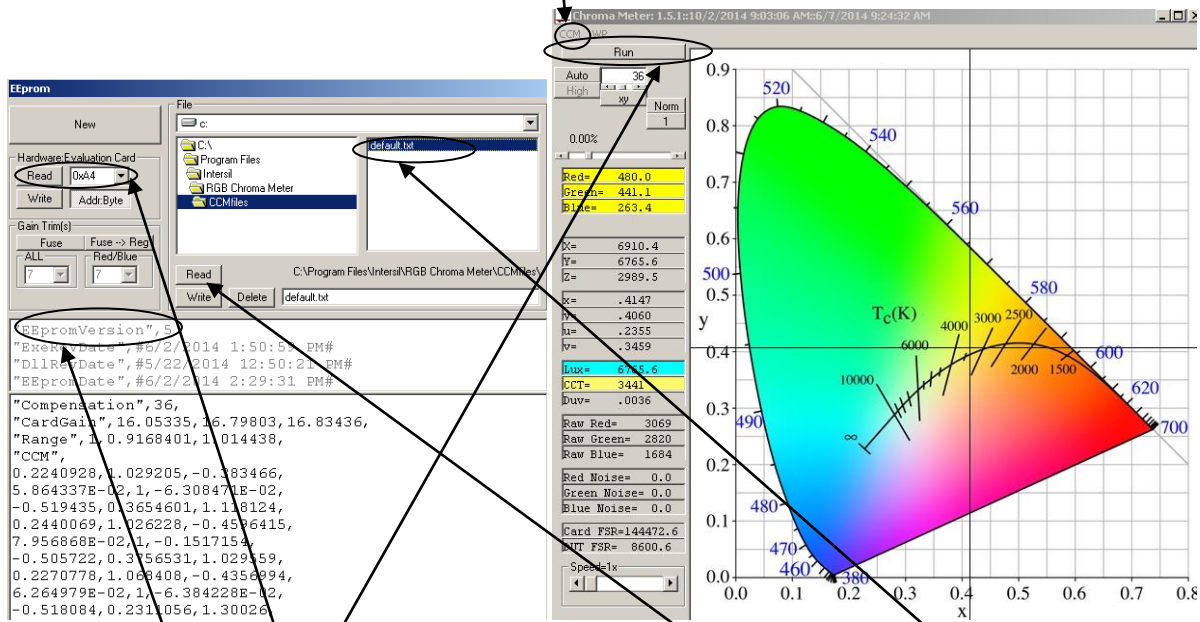


Figure 1. Chroma Meter GUI and related EEprom GUI

 - b. Set I2C address to 0xA4 for Evaluation card as shown in Figure 1
 - c. Click on "Read" to read out the calibration data from EEprom. The latest EEprom calibration data version should be 5. If not, import the calibration header text from "default.txt" as shown in the rightmost panel under installation directory by pressing Read button
 "C:\Program Files\Intersil\RGB Chroma Meter\CCMfiles".
 Note above directory may be changed depending on the installation directory of Chroma meter
 - d. Click on 'Run' button so that it changes to 'hold' before Calibration in excel

3. Launch "simple.ALS.drv.xlsm" (see below inserted excel file)

Go to Tab "EVB CCT Cal". Hit "Reset" button in cell "K6" to clear the historical calibration data including the calibration data section (green part), IR compensation and Measured XYZ values (yellow sections).

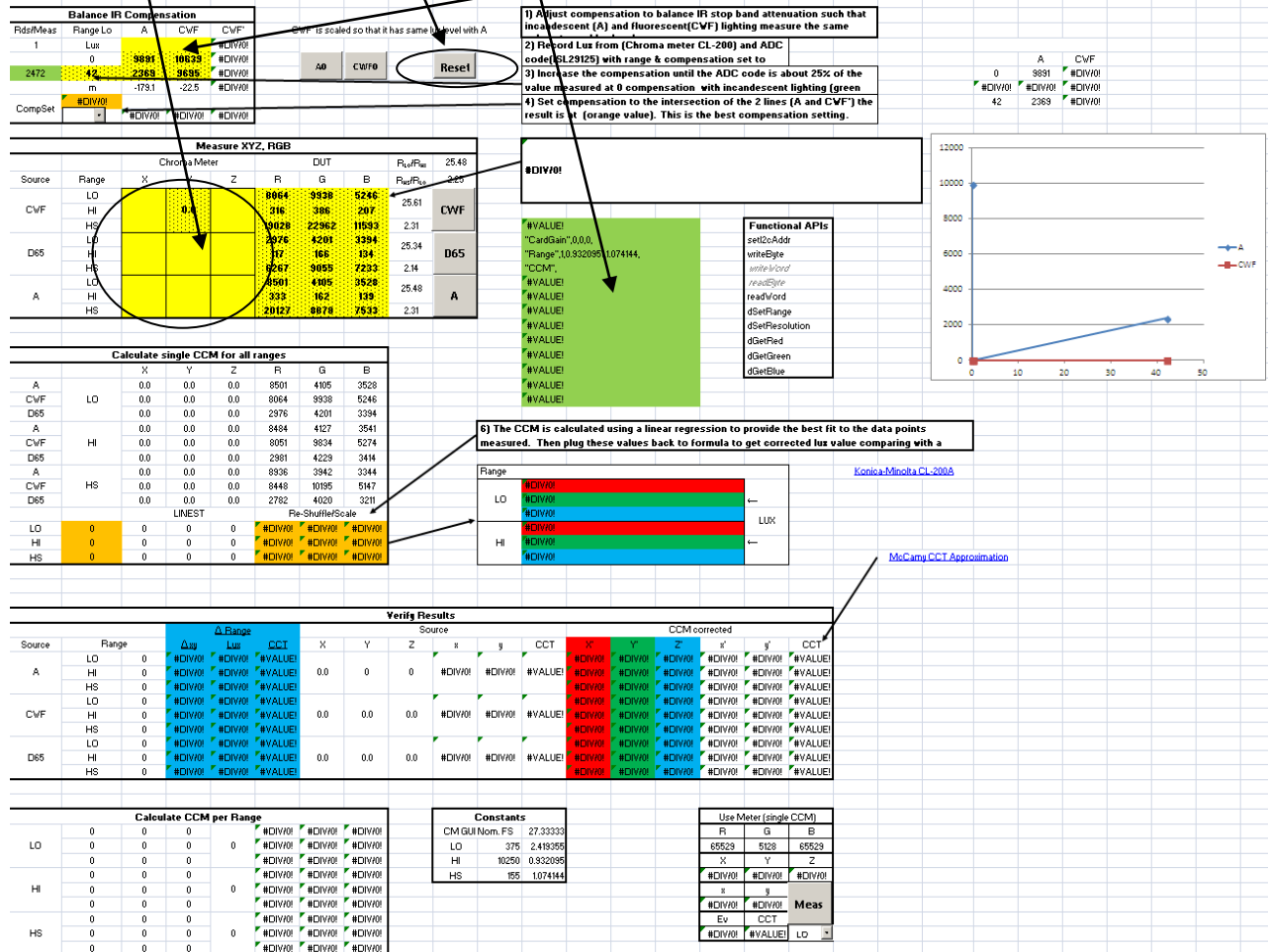


Figure 2. Calibration Spreadsheet

4. Perform IR compensation calibration

Balance IR Compensation				
Rds/Meas	Range Lo	A	CwF	CwF'
1	Lux	481.8	929.5	0.518
	0	12872	10092	5231
3208	52	3061	9305	4823
	m	187.9	15.1	-7.8
	42			
CompSet	42	4940	9456	4902

CwF' is scaled so that it has same lux level with A

A0 CWF0 Reset

Figure 3 IR compensation section

a. Measure A illuminance lux (EV value)

- 1) Turn on 3200K/8000 lux light source (Quartz Tungsten Halogen (QTH) lamps).
- 2) Place the color conversion filter (D30 to A) between the QTH light source and the Integrated sphere to generate the A illuminant (CCT~2800K)
- 3) Input the chroma meter reading of A illuminant light level (lux) value into Cell "D4" in tab "EVB CCT Cal"
- 4) Press the button "A0" in Cell "H5"

b. Measure CWF illuminance lux (EV value)

- 1) Turn on 3200K/8000 lux light source (Quartz Tungsten Halogen (QTH) lamps).
- 2) Place the color filter (D30 to CWF) between the light source and the integrated sphere to generate CWF illuminant (CCT ~4000K)
- 3) Input the chroma meter reading of CWF illuminant light level (lux) value into Cell "E4" in tab "EVB CCT Cal"
- 4) Press the button "CWF0" in Cell "H5"

The IR compensation values can be found in cell "C8" on the right side of CompSet.

5. Perform CCM calibration

Measure XYZ, RGB									
		Chroma Meter			DUT			R_{Lo}/R_{Hi}	26.45
Source	Range	X	Y	Z	R	G	B	R_{Hi}/R_{Lo}	2.28
CWF	LO	884.7	929.5	462.7	7302	9468	5218	26.50	CWF
	HI				275	357	198		
	HS				16911	21225	12027	2.28	
D65	LO	415.8	475.8	465.7	3654	5047	4389	26.35	D65
	HI				139	191	167		
	HS				8206	11637	10055	2.29	
A	LO				11088	5073	5670	26.51	A
	HI	478.2	481.3	156.8	417	193	215		
	HS				23998	11712	13176	2.21	

Figure 4 XYZ calibration section

a. Measure CWF illuminant tristimulus values (XYZ)

- 1) Turn on 3200K/8000 lux light source (Quartz Tungsten Halogen (QTH) lamps).
- 2) Place the color filter (D30 to CWF) between the light source and the integrated Sphere to generate the CWF illuminant (CCT 4000K)
- 3) Input the chroma meter reading of XYZ values into Cells "D14: F14" in tab "EVB CCT Cal" and Press button "CWF"

b. Measure D65 illuminant tristimulus values (XYZ)

- 1) Turn on 3200K/8000 lux light source (Quartz Tungsten Halogen (QTH) lamps).
- 2) Place the color filter (D30 to D65) between the light source and the integrated Sphere to generate the CWF illuminant (CCT 6500K)
- 3) Input the chrome meter reading of XYZ values into Cells "D17: F17" in tab "EVB CCT Cal and Press button "D65"

c. Measure A illuminant tristimulus values (XYZ)

- 1) Turn on 3200K/8000 lux light source (Quartz Tungsten Halogen (QTH) lamps).
- 2) Place the color filter (D30 to A) between the light source and the integrated Sphere to generate the CWF illuminant (CCT~2800K)
- 3) Input the chrome meter reading of XYZ values into Cells "D20:F20" in tab "EVB CCT Cal" and Press button "A".

6. Copy the generated CCM calibration value, CardGain, CCM and Range in range "M16: M28" (green cells) and paste it into Chroma meter EEprom data region (as shown below) and press "Write" button in the upper left corner.

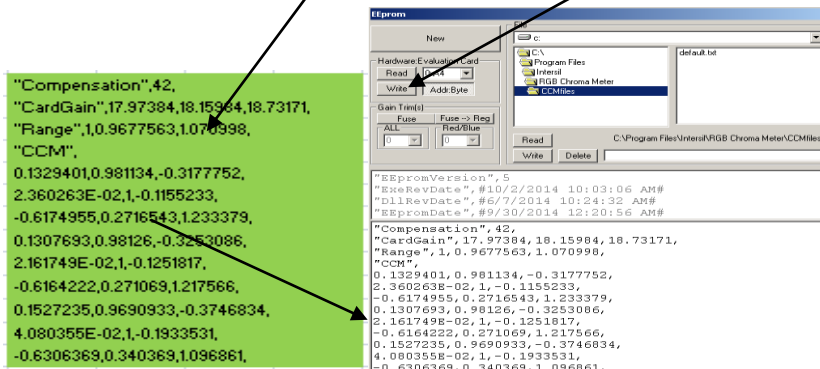


Figure 5 Final Calibration Write into EEprom